

### Synonym

Spike,S protein RBD,Spike glycoprotein Receptor-binding domain,S glycoprotein RBD,Spike protein RBD

### Source

SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) (SPD-C522u) is expressed from human 293 cells (HEK293). It contains AA Arg 319 - Lys 537 (Accession # [QHD43416.1](#) (G339D, R346T, S371F, S373P, S375F, T376A, D405N, R408S, K417N, N440K, L452M, S477N, T478K, E484A, Q493R, Q498R, N501Y, Y505H)). The spike mutations are identified on the SARS-CoV-2 Omicron variant (Pango lineage: BA.2.74).

Predicted N-terminus: Arg 319

### Molecular Characterization

This protein carries a polyhistidine tag at the C-terminus

The protein has a calculated MW of 26.6 kDa. The protein migrates as 33-37 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

### Endotoxin

Less than 1.0 EU per  $\mu\text{g}$  by the LAL method.

### Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

### Formulation

Lyophilized from 0.22  $\mu\text{m}$  filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

### Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

### Storage

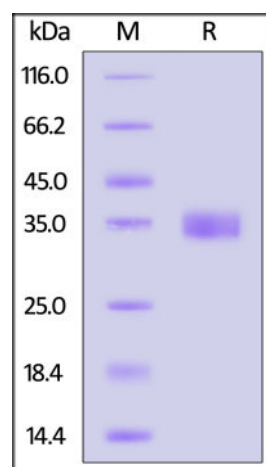
For long term storage, the product should be stored at lyophilized state at  $-20^{\circ}\text{C}$  or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  for 12 months in lyophilized state;
- $-70^{\circ}\text{C}$  for 3 months under sterile conditions after reconstitution.

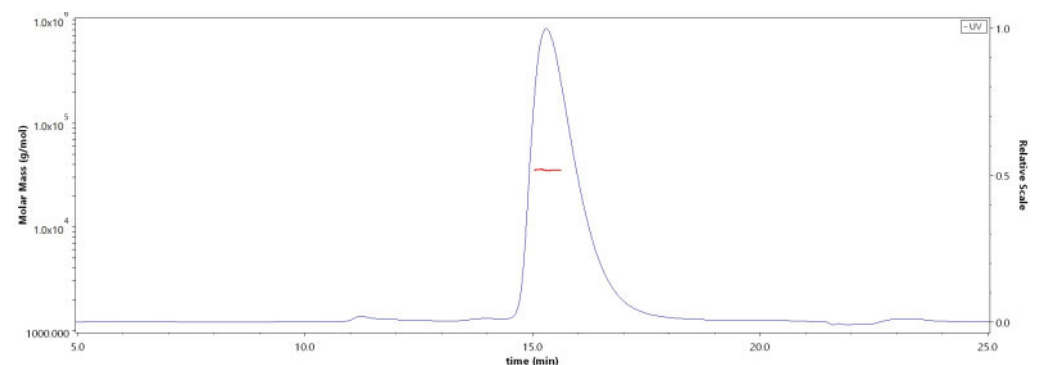
### SDS-PAGE



SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

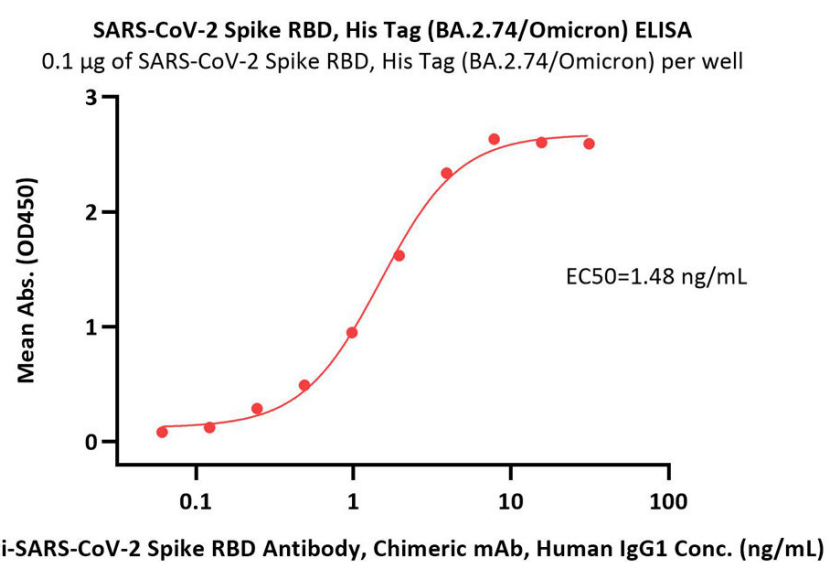
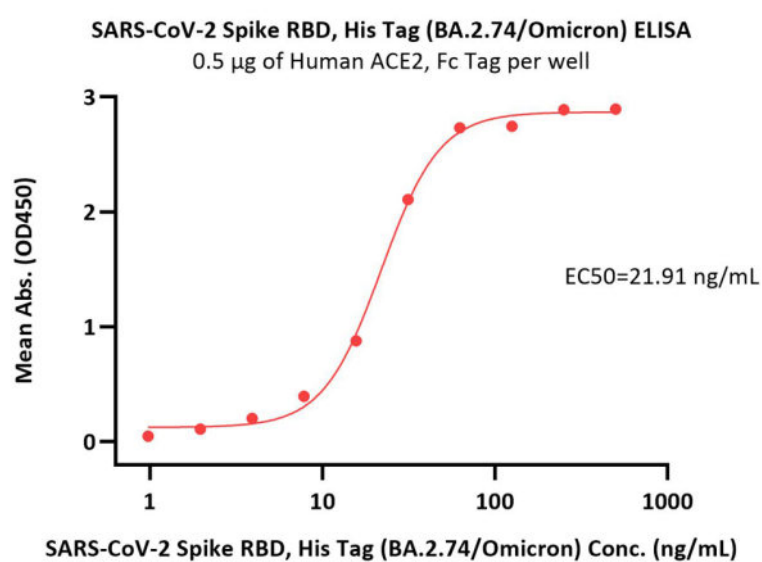
### Bioactivity-ELISA

### SEC-MALS



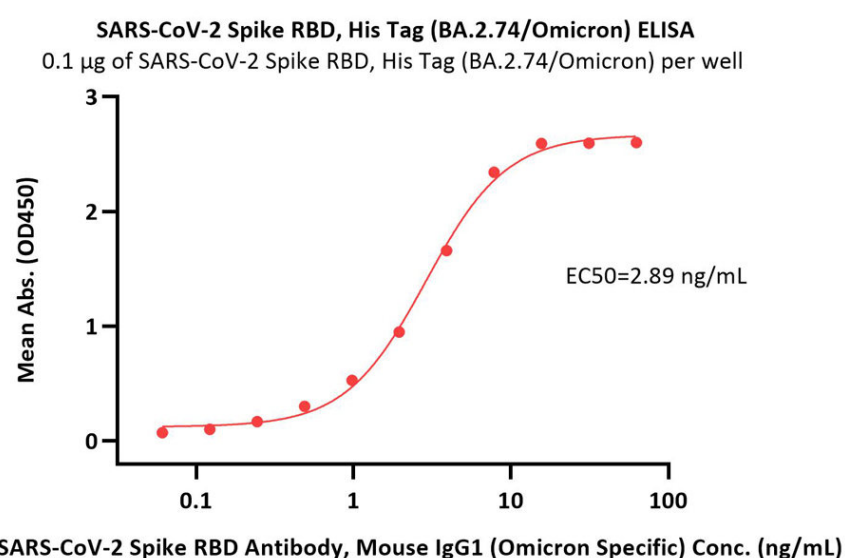
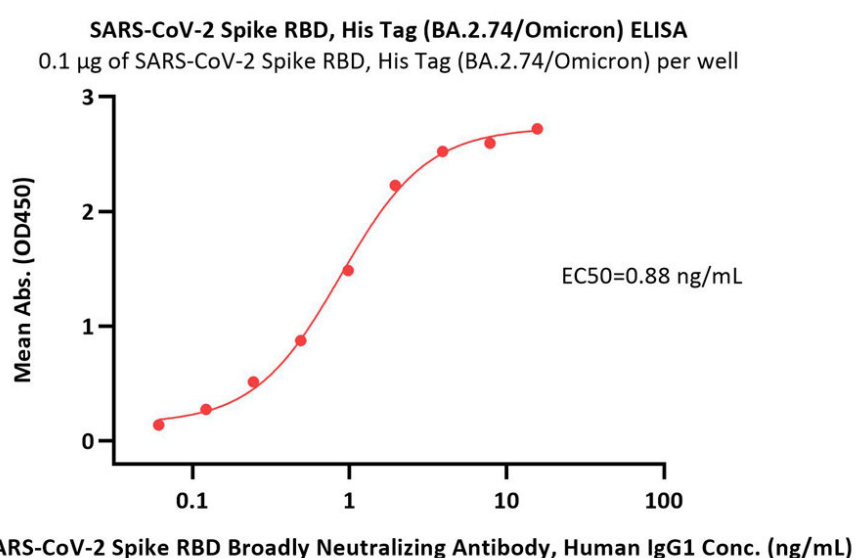
The purity of SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) (Cat. No. SPD-C522u) is more than 90% and the molecular weight of this protein is around 28-42 kDa verified by SEC-MALS.

[Report](#)



Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 5 µg/mL (100 µL/well) can bind SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) (Cat. No. SPD-C522u) with a linear range of 1-31 ng/mL (QC tested).

Immobilized SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) (Cat. No. SPD-C522u) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Spike RBD Antibody, Chimeric mAb, Human IgG1 (Cat. No. S1N-M122) with a linear range of 0.1-4 ng/mL (Routinely tested).



Immobilized SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) (Cat. No. SPD-C522u) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Spike RBD Broadly Neutralizing Antibody, Human IgG1 (Cat. No. SPD-M265) with a linear range of 0.1-2 ng/mL (Routinely tested).

Immobilized SARS-CoV-2 Spike RBD, His Tag (BA.2.74/Omicron) (Cat. No. SPD-C522u) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Spike RBD Antibody, Mouse IgG1 (Omicron Specific) (Cat. No. SPD-M305) with a linear range of 0.1-8 ng/mL (Routinely tested).

**Background**

It's been reported that Coronavirus can infect the human respiratory epithelial cells through interaction with the human ACE2 receptor. The spike protein is a large type I transmembrane protein containing two subunits, S1 and S2. S1 mainly contains a receptor binding domain (RBD), which is responsible for recognizing the cell surface receptor. S2 contains basic elements needed for the membrane fusion. The S protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity.

**Clinical and Translational Updates**

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.